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# Role of nurse coordinator in the integrated care of patients with advanced chronic obstructive pulmonary disease

## Abstract

The need to improve the care of patients coping with advanced chronic obstructive pulmonary disease (COPD) is well documented. Patients suffering from advanced COPD present a lot of co-morbidities: pulmonary hypertension, cor pulmonale, coronary heart disease, malnutrition, vascular disease, osteoporosis, skeletal muscle dysfunction. Depression and anxiety, impaired mental function, decrease of cognitive activity may add to patients' deteriorated self-management, and poor compliance. The insufficient self-management and poor compliance result in unfavorable course of the disease, and frequent exacerbations requiring hospitalization. Not every patient could be supported by the family. Lack of knowledge on the disease itself and on the management of COPD, inability to take everyday care of patient, and in some families the shortages in their income may lead to improper support given to patient by his or her relatives. Integrated respiratory care was defined as the holistic coordinated, patient-focused and multidisciplinary delivery of high-quality, both pharmacological and non-pharmacological care. In practice it means the management of the disease is provided by well cooperated and coordinated team. Such multidisciplinary team usually includes physicians (primary care physician, respiratory specialist), nurses, psychologists, physiotherapists, social workers, volunteers. The care can be organized into five kinds of intellectual and physical activities: assessing, planning, implementing, evaluating, and communicating. These activities must be integrated and often introduced simultaneously. Coordinator plays a pivotal role in a care process in patients with advanced COPD.


**Key words:** advanced COPD, integrated respiratory care, coordinator

Adv. Pall. Med. 2011; 10, 1: 11–16

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 Advances in Palliative Medicine 2011, 10, 11–16

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## Introduction

The need to improve the care of patients coping with advanced chronic obstructive pulmonary disease (COPD) is well documented [1]. In this group of patients lack of the proper medical, psychological spiritual support has been described earlier [2]. Quality of life both patients and their relatives is usually particularly poor [1]. The impact of COPD on the individual patients' life depends on the degree of airflow limitation and severity of symptoms. Advanced COPD is characterized by worsening of airflow limitation (severe stage —  $FEV1 < 50\%$  of predicted value, and very severe —  $FEV1 < 30\%$ ), shortness of breath, reduced exercise capacity, fatigue and repeated exacerbations. The proportion of patients suffer from chronic respiratory failure. Chronic obstructive pulmonary disease (COPD) is associated with substantial morbidity and mortality [3, 4]. Co-morbidities may result directly from the pathology of COPD (eg. pulmonary hypertension and cor pulmonale) or indirectly from the lifestyle or behavior associated with COPD (coronary heart disease, malnutrition, vascular disease, osteoporosis, skeletal muscle dysfunction). In patients with COPD depression and anxiety are common, moreover prolonged hypoxia may be associated with impaired mental function in COPD. Further, cognitive activity declines with aging. All these factors may add to patients' deteriorated self-management, and poor compliance [5]. It was clearly demonstrated that insufficient self-management and poor compliance result in unfavorable course of the disease, and frequent exacerbations requiring hospitalization.

Unfortunately not every patient could be supported by the family. Lack of knowledge on the disease itself and on the management of COPD, inability to take everyday care of patient (for example: elderly couple), and in some families the shortages in their income may lead to improper support given to patient by his or her relatives.

## Integrated model of care

Recent discussion on the integrated care in advanced COPD patients demonstrated the urgent need for the development of model of the more complex management including individual education, controlled treatment and everyday support. Integrated respiratory care was defined as the holistic coordinated, patient-focused and multidisciplinary delivery of high-quality (both pharmacological and non-pharmacological) care [6]. In practice it means the

management of the disease is provided by well cooperated and coordinated team. Such multidisciplinary team usually includes physicians (primary care physician, respiratory specialist), nurses, psychologists, physiotherapists, social workers, volunteers. The care can be organized into five kinds of intellectual and physical activities: assessing, planning, implementing (acting), evaluating, and communicating. These activities must be integrated and often introduced simultaneously. Coordinator plays a pivotal role in a care process in patients with advanced COPD.

## Role of nurse-coordinator in the integrated care for advanced COPD patients

Nurse-coordinator plays a role of liaison-officer in the multidisciplinary team enabling the proper contact between the remaining members of the team and patients and their family. She or he controls also the treatment and patients' compliance and recognizes their need for the social and psychological support (Figure 1). Nurse coordinator supervises the volunteers and gains the information from them on the problems relating to self-management and compliance. In case of the signs and symptoms of exacerbation nurse coordinator organizes unscheduled visit or admission to the hospital (if needed) (Table 1).

Recently coordinated medical care has been proved to be an efficient model in other chronic diseases including diabetes and neurological disorders [7, 8].

Numerous advantages related to coordinated care were shown like reduction of the length of hospital stay [7], decrease in number of exacerbations requiring hospitalization per year or even improved prognosis [9].

The efficient model of coordinated medical care described Denberg and co-authors. Barriers to guideline-based diabetes care include poor patient activation, haphazard clinic appointments, poorly organized medical records and a lack of automated physician decision support. Developed patient recall intervention mitigated these barriers and improved diabetes care coordination. An outreach coordinator contacted patients to summarize information about patients and schedule recommended services. Among overdue patients, completion of recommended services and intensity of diabetes care were significantly greater through the outreach program compared with traditional care [10].

The coordinated medical care can improve the psychosocial functioning patients with dementia

**Table 1. Responsibilities of nurse-coordinator**


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To control the use of inhalators (education how to use, control of consumption)
To educate patients and their family
To asses patient situation (medical and non medical needs of the patients and their family, shortages of socioeconomic status)
To plan the integrated care: contact with primary care physician, booking respiratory specialist visits, nursing visits, volunteer, psychologists, social workers
To implement process of care
To evaluate process of care: telephone contact with patient and his family
To communicate with patient his family and multidisciplinary team

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Patient's name: .....

Address: .....

Phone: .....

Person to contact: .....

Family status: .....

Disease history: .....

Stage COPD: .....

Treatment: .....

Medications: .....

.....

.....

o how patients cope with inhalators: well ☐ wrong ☐

o when patient and/or his caregiver was trained how to use inhalators .....

.....

Oxygen therapy: .....

Rehabilitation: .....

Concomitant disease:

— cardiovascular system: .....

— skeletal and muscle disfunction: .....

— mental problems: .....

Smoking status: .....

Socioeconomic status: .....

**Figure 1.** COPD patient survey for coordinator use

and their family caregivers. The randomized controlled trial of a dementia care program for families of home-resided older people with dementia conducted in Hong Kong. Participants in the family program reported significantly greater improvements in clients' symptoms and institutionalization rates, and caregivers' quality of life and burden, when compared with their counterparts in the routine care group [11].

Researches on coordinated care in respiratory diseases analyzed the influence of a home care program on outcomes of patients with COPD receiving long-term oxygen therapy in comparison with outcomes of patients receiving standard care.

The disease-oriented home care program was more effective in reducing mortality and hospital admissions in COPD patients requiring long-term oxygen therapy [9].

In the other community-based geographical control study, in western and northern metropolitan Adelaide multidisciplinary care plan generators (CPGs) were constructed with input from consumers (patients and their carers), GPs, respiratory physicians, allied health professionals, the Royal District Nursing Service, domiciliary care. GPs were supported by "service coordinators" (nurses), who liaised with the patient, GP, respiratory specialist and other health-

**Table 2. Medical and non-medical needs of patient with advanced COPD**

<b>Medical needs</b>
Primary care physician care
Respiratory specialist consultation
Medications, written therapy scheme, written scheme of self-treatment in the case of exacerbation
Education how use inhalators
Oxygen therapy
Rehabilitation plane
Treatment of concomitant disease
<b>Non medical needs</b>
Diet, food supply
Help in transport
Help in daily activity
Encouraging in self-sufficient, help insufficient
Help in reach minimal socio-economic conditions
Contact with family and friends
Help in psychological problems
Support
Recreation

care professionals, monitored the patient, and encouraged implementation of the evolving care plan. Duties included booking investigations, arranging case conferences, referrals, home visits and collecting data. Coordinated care given to patients with chronic respiratory disease did not affect hospitalization, but was associated with the improvement in some quality-of-life measures [12].

The National Emphysema Treatment Trial (NETT) designed primarily for the evaluation of the effectiveness of the surgical lung volume reduction in thousands of patients with emphysema assessed additionally factors associated with better quality of life [9]. The successful balance of the clinic coordinator's roles of researcher and patient care provider was essential to the overall conduct of NETT. As coordinators, the staff was given the opportunity to provide necessary care, education, and support to patients with severe emphysema who had chosen to enroll as study subjects in NETT [13].

## Education

Continuing medical education (CME) is an essential part of integrated model. All members of multidisciplinary team should improve their knowledge on current standards and international guidelines.

The knowledge about COPD, treatment, possible complications, psychological problems, physiotherapy, diets and possibilities of social, spiritual and other non-medical support is crucial for nurse-co-

ordinator (Table 2). Furthermore the coordinator should appropriately and effectively communicate with patient, his or her family, physicians, respiratory specialists, nurses and all ancillary specialists as well as family members and volunteers. Training of coordinators is required, giving improvement of medical as well as nonmedical aspects of care offered by the team of carers [14]. It should include the units regarding the team work, proper communication, problem-solving within the team, as well as with difficult patients and their families. Nurse-coordinator should master new competencies necessary for the coordination of the team. Initial and ongoing training for coordinators are required. The proper textbook for the COPD nurse-coordinator should be prepared in order to make the integrated care for COPD patients possible in the home care settings. Textbook prepared for hospice and palliative care coordinators could be the valuable resource to begin [15]. In the same way the practical textbook for the families of COPD patients as well as for the volunteers should be edited, as a support tool for the involvement of non-professionals into the home care [16]. Adequately designed webpage for the integrated care for advanced COPD could include important tools for coordinators, all team members and patients with their families. E-learning for volunteers and web forum for volunteer coordinators are active places of problem solving and new ideas in hospice and palliative care teamwork [17]. These initiatives will take time and effort, but should bring good consequences.

The results of the national survey dedicated to the hospice and palliative care coordinators in Poland in 2010 showed improvement of quality of care as well as caring team satisfaction after training designed for volunteers coordinators [18]. Better coordination of care for advanced COPD patients and cooperation with their close ones should bring similar improvements in home care settings.

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